Set-Up Procedures for Design

File Format

MicroStation Design files have a '.DGN' extension. MicroStation systems use a 'seed file' and a DGN Library file to create all successive design files. The 'seed file' provides standard parameters for each file created, and the DGN Library file provides standard levels, text styles and dimension styles. This allows optimal accuracy and standardization. The parameters considered necessary to begin the design or edit session should include, but not be limited to, the parameters listed in this document. The following narrative uses MicroStation specific commands and terminology to describe standardization with IDOT's use of CADD

Plan & Cross Section Files

Every operation during a 2D-design session takes place relative to a design plane. The design plane is a Cartesian coordinate system upon which the design resides. Coordinate positions are now stored in IEEE double precision floating point format. The previous problems of limited design cube space are gone. The design cube in Microstation V8 is nearly two million times the size of previous versions.

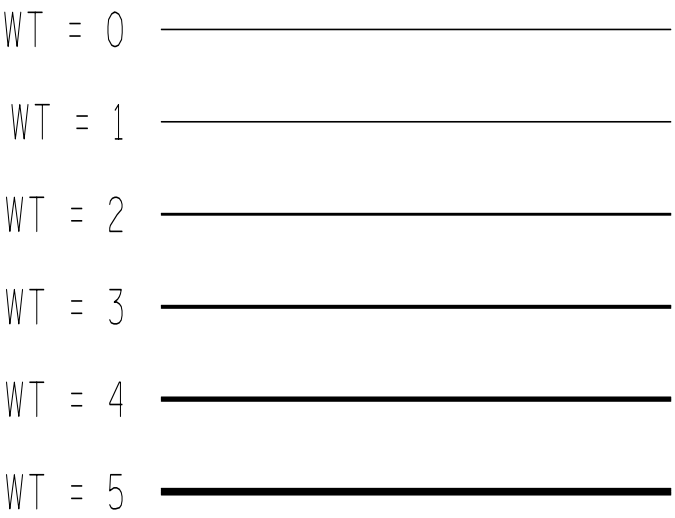
Format for the Working Units is Master Units and Sub Units, with Master Units being Survey Feet and the Sub Unit being Survey Inches. There is a user specified number of Sub Units per Master Unit. For plan and cross section sheets there are 1000 Sub Units per Master Unit.

MicroStation allows the working units to be displayed in several different ways. The display specification may be reviewed or changed by selecting the 'settings' pull down menu and the coordinate readout dialog box. The format chosen by IDOT is decimal Master Units, having four significant digits to the right of the decimal point. In addition, within the same dialog box, angle format is selected specifying 'DEGREES, MINUTES, and SECONDS' to be used"

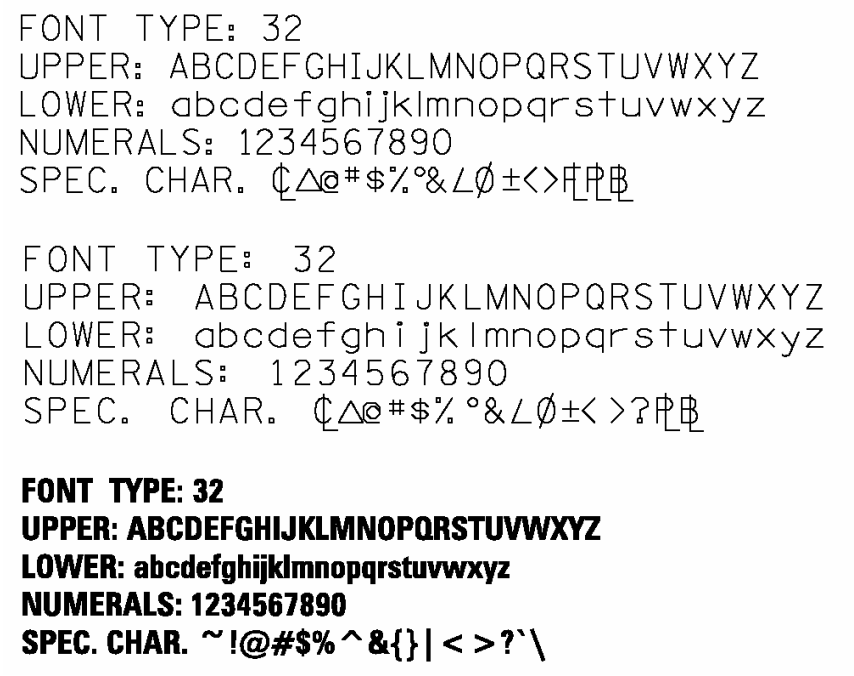
MicroStation uses a series of 'Locks'. All 'Locks' except 'SNAP KEYPOINT LOCK' should be toggled to the off position.

'FAST DISPLAY' is a mode that will allow selection of four graphic representations, cells, curves, text, and font to be displayed in an abbreviated form. The IDOT specification for displaying the above elements is a full representation of each element. The 'DISPLAY ON/OFF' commands found in the view attributes dialog box permit certain classes of elements to be selectively eliminated from view in any 'DESIGN FILE'. The 'seed file' IDOT uses has the 'GLOBAL ORIGIN' set to 0,0.

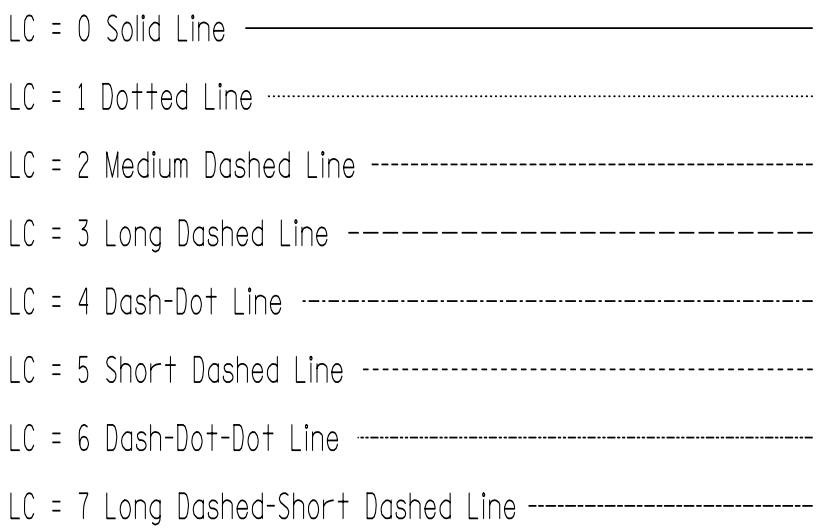
Line Weight' is by IDOT definition a 'Non-Seedfile' parameter. 'Line Weight' can be described as line width ranging from the narrowest (weight 0) to the widest (weight 31). Line weight is changeable during an edit session using the key-in 'WT= (value)'. Differing line weights are necessary to describe and differentiate lines used to depict R.O.W.'s, easements, setbacks, properties, etc.



Three different Text Styles have been developed using fonts 32, 40 and 115. Text height and width for these styles is set to 0.12 in the seed file. An Annotation Scale of 1:50 will produce a text height and width of 6 feet for a 50 scale drawing. The IDOT default library is named 'fontlib.rsc.' Examples of the default font library are shown below.



'Line Code' is another user definable parameter used by IDOT to allow discrimination of line descriptions. 'Line Code' is keyed in using 'LC= (value)' and can define solid, dotted, medium dashed, long dashed, etc. There are a total of eight line codes described by MicroStation using digits zero through seven for selection.



IDOT has assigned specific user defined line styles for plan preparation and topographic data. Line styles have unique color, weight, and level based on their application. Geopak's Design and Computation Manager automates the selection and placement process for the user. A few line styles are shown below for examples. A complete list appears in Standard 000001 and in the Settings Manager. Many times the same line style applies to both existing and proposed work but will appear different due to color, weight, and level.